UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,816	05/11/2001	Fouad A. Tobagi	PA1689US	7692

22830 7590 07/26/2005

CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303

EXAMINER	
PHAN, MAN U	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/853,816	TOBAGI ET AL.	
	Examiner	Art Unit	
	Man Phan	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33 and 35-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33 and 35-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/11/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment and Argument

1. This communication is in response to applicant's 05/11/2005 Amendment in the application of Tobagi et al. for a "System and method for controlling data transfer rates on a network" filed 05/11/2001. The proposed amendments to the claims and response have been entered and made of record. Claim 34 has been canceled per Applicant's request, claims 1, 9, 16, 25 have been amended, and new claims 36-37 have been added. Claims 1-33 and 35-37 are pending in the application.

The amended paragraph [0001] in specification correct the status of the elated application. Therefore, examiner has withdrawn the Objections of record to the specification.

The rejection of record with respect to claims 2-3, 17-18, 26-27 under 35 U.S.C. 112, second paragraph are hereby removed based on applicant's amendment.

2. Applicant's remarks and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.

Applicant's argument with respect to the rejected claims 16 and 25 (page 10, second paragraph) that "*the selected priority level result in absolute transfer rate or is responsive to other factors such as the total amount of traffic receiver*" on which the Applicant relies as discussed at length in the specification as filed, p. 9, l. 24-30. However, It is the claims that

define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064.

Applicant's argument with respect to the rejected claims that the cited references fails to disclose or suggest "*the control of data rates based on priority*". However, as discussed in the previous Office Action, Merchant et al. (US#5,933,413) is applied herein merely for the teaching of the regulating communications transmission, in which a priority control selectively allocates host computer resources based on network transmission and network reception by the network interface, and based on available space in the receive buffer, available data in the transmit buffer (Se Fig. 2; Col. 2, lines 25 plus and Col. 5, lines 27 plus). The Applicant's attention is directed to the priority controller 16a for selectively allocating the host computer resources based on data packet frame size (data rate) and the buffer space available as shown in Fig. 4-6 (Col. 10; lines 39 plus, and Col. 11, lines 30 plus). It's noted that the concept of scheduling plays the role of securing the data rate of each channel on the link. It does this by going through each channel buffer in a round robin fashion (e.g., from high priority to low priority order) and choosing enough data from each channel to accommodate the data rate that is assigned to that channel. It's also noted that prioritizing rate control based on channel conditions, data in their respective buffers, etc., is well known in the art of communications transmission. Therefore, examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 .S.C. 112, first paragraph

3. Newly added claims 36, 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added limitation "*priority of the data is proportion of utilized bandwidth at which the data is delivered to the receive buffer*" has no support in the disclosure.

Furthermore, Fig. 8 is best described for the claims, and the drawings must show every feature of the invention specified in the claims. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 1038 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-6, 9-12, 16-21 and 25-30, are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US#6,715,007) in view of Merchant et al. (US#5,933,413).

With respect to claims 16-19 and 25-28, Williams et al. (US#6,715,007) and Merchant et al. (US#5,933,413) discloses method and system for rate-based flow control in conjunction with TCP/IP network, according to the essential features of the claims. Williams discloses in Fig. 1 a block diagram illustrated the data flow regulation in communication systems, in which the data rate is established in each of a data source (24) and a data sink (28). The data (26) is transmitted by the data source (24) and written into a buffer (32) at the source data rate, then read from the buffer (32) and received by the data sink (28) at the sink data rate. The level (62) of data (26) in the buffer (32) is monitored, and a rate-control signal (74) is dispatched to either the data source (24) or sink (28) when it is determined the buffer data level (62) is decreasing or increasing while at a lower or upper data-level threshold (66, 68), respectively. One of the data rates is adjusted in response to a rate-control signal (74) (See also Fig. 3; Col. 2, lines 57 plus and Col. 4, lines 27 plus).

Williams et al. (US#6,715,007) differs from claims in that Williams does not expressly disclose the amount of available space in the receive buffer is maintained at a regulated value. In the same field of the endeavor, Maechant et al. (US#5,933,413) discloses a network interface capable of allocating bus interface and buffer resources in a host computer system to improve network and system throughput. The network interface stores data frames received from the host computer via a peripheral component interconnect (PCI) bus in a transmit buffer for transmission on the network. The network interface also stores data from the network in a receive buffer for transfer to a host computer memory via the PCI bus. A priority control selectively allocates host computer resources based on network transmission and network reception by the network interface, and based on available space in the receive buffer, available data in the transmit buffer, and the estimated length of data packets received from the network. The selective allocation of host computer resources minimizes transmit buffer underflow and receive buffer overflow (Figs. 1A&B; Col. 2, lines 17 plus).

Regarding claims 20-21 and 29-30, the use of standard FTP/HTTP transmission in the receiver to provide the server with the ability to retrieve and transmit data files, and the reliance on a commonly known standard such as the use of standard FTP and HTTP protocols over network through network interface in the manner claimed would have been obvious to the artisan as a matter of the application programming interfaces.

Regarding claims 1-6 and 9-12, they are method claims corresponding to the apparatus claims above. Therefore, claims 1-6 and 9-12 are analyzed and rejected as previously discussed with respect to claims 16-19 and 25-28.

One skilled in the art would have recognized the need for effectively and efficiently routing and processing of information in packet switching network, and would have applied Merchant' novel use of the network interface with a priority control based on available space in the receive buffer into Williams's teaching of the data flow regulation in processing packets in TCP/IP network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Merchant' adaptive priority determination for servicing transmit and receive in network controllers into Williams's method of regulating a flow of data in a communication system and apparatus therefor with the motivation being to provide a method and system for regulating the rate of transmission under TCP/IP protocols network.

7. Claims 7-8, 13-15 and 22-24, 31-33, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US#6,715,007) in view of Merchant et al. (US#5,933,413), as applied to the claims above, and further in view of Packer (US#6,038,216).

With respect to claims 22-24 and 31-33, 35, Williams and Merchant disclose the claimed limitations discussed in paragraph 6 above. However, Williams and Merchant do not expressly disclose the regulation of a rate at which data is removed is a function of a determined frequency of lost packets. In the same field of endeavor, Packer (US#6,038,216) discloses a method for controlling data rate of data packets in a digital data packet communication environment employing TCP/IP protocols, in which TCP has `flow control` mechanisms operative at the end stations only to limit the rate at which a TCP endpoint will emit data. The sliding window flow control mechanism works in conjunction with the

Retransmit Timeout Mechanism (RTO), which is a timeout to prompt a retransmission of unacknowledged data. The timeout length is based on a running average of the Round Trip Time (RTT) for acknowledgment receipt, i.e. if an acknowledgment is not received within (typically) the smoothed RTT+4*mean deviation, then packet loss is inferred and the data pending acknowledgment is retransmitted. Data rate flow control mechanisms which are operative end-to-end without explicit data rate control draw a strong inference of congestion from packet loss (inferred, typically, by RTO). TCP end systems, for example, will `back-off`, i.e., inhibit transmission in increasing multiples of the base RTT average as a reaction to consecutive packet loss. Bandwidth Management in TCP/IP Networks (Figs. 2A-I; Col. 1, lines 49 plus and Col. 3, lines 17 plus)

Regarding claims 7-8 and 13-15, they are method claims corresponding to the apparatus claims above. Therefore, claims 7-8 and 13-15 are analyzed and rejected as previously discussed with respect to claims 22-24 and 31-33.

One skilled in the art would have recognized the need for effectively and efficiently routing and processing of information in packet switching network, and would have applied Packer's controlling data rate of data packets in TCP/IP protocols network, and Merchant' novel use of the network interface with a priority control based on available space in the receive buffer into Williams's teaching of the data flow regulation in processing packets in TCP/IP network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Packer's method for explicit data rate control in a packet communication environment without data rate supervision, and Merchant' adaptive priority determination for servicing transmit and receive in network controllers into

Williams's method of regulating a flow of data in a communication system and apparatus therefor with the motivation being to provide a method and system for regulating the rate of transmission under TCP/IP protocols network.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

July 13, 2005

MAN U. PHAN
PRIMARY EXAMINER